

# Notice of Allowability

Application No.

10/699,830

Examiner

Tung X Nguyen

Applicant(s)

HUANG ET AL.

Art Unit

2829

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 11/04/03.
2. ☒ The allowed claim(s) is/are 1-13.
3. ☒ The drawings filed on 04 November 2003 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
  - \* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTG948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

## DETAILED ACTION

### *Allowable Subject Matter*

1. Claims 1-13 are allowed.

The following is an examiner's statement of reasons for allowance:

As to claims 1-6, the prior art does not teach a measuring device for measuring the coupling capacitance between two lines of an integrated circuit structure particularly defined by the characteristic of a third test structure having a first subordinate structure comprising a fifth line of length  $y+L$ ; and the sixth lines of length  $y+L$  placed at the two sides of the fifth line, which are parallel to and equally away from the fifth line, the two sixth lines being the same as the fifth line; and a second subordinate structure comprising two parallel seventh lines of length  $y$  spaced a distance of  $s$  apart; wherein the parallel overlap length between the two seventh lines is  $y$ , the two seventh lines being the same as the fifth line; and forth test structure comprising a third subordinate structure having three parallel eighth lines of length  $y$  spaced a distance of  $s$  apart, the three eighth lines being the same as the fifth line; and a fourth subordinate structure comprising two parallel ninth lines of length  $y+L$  spaced a distance of  $s$  apart; wherein the total loading capacitance of the third node derived from the third test structure minus that of the fourth node derived from the fourth test structure is the second coupling capacitance  $C_{dummy}$  of the target line of length  $L$ ; in combination with the other claimed features.

As to claims 7-13, the prior art does not teach a method for measuring a line-to-line coupling capacitance  $C_c$  between a line A and line B of an integrated circuit

Art Unit: 2829

structure of length particularly defined by the characteristic of employing the first measuring set; wherein the first lines is the same as the line A and two second lines are the same as the line B; measuring a first average current  $I_1$  during a first period of time flowing through the first branch circuit and a second average current  $I_2$  during the first period of time flowing through the second branch circuit; and calculating a first capacitance  $C$  from the equation  $C = (I_1 - I_2) / (V_{dd} * f)$ ; and calculating a second capacitance  $C_{dummy}$  for the equation  $C_{dummy} = (I_3 - I_4) / (V_{dd} * f)$ ; and determining the line-to-line coupling capacitance  $C_d$  between the line A and the line B according to the formula  $C_c = (C - C_{dummy}) / 2$ ; in combination with the other claimed features.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

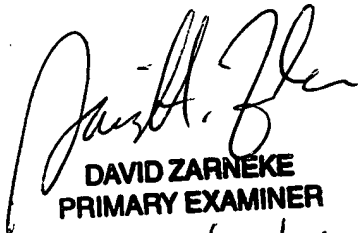
2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung X Nguyen whose telephone number is (571) 272-1967. The examiner can normally be reached on 8:30am-5:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Tokar can be reached on (571) 272-1812. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2829

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TN  
11/22/04

  
**DAVID ZARNEKE**  
**PRIMARY EXAMINER**  
11/23/04